

APPENDIX H

OFFSITE EMERGENCY PLANNING

H.1 INTRODUCTION

The comprehensive emergency preparedness planning effort for the Savannah River Plant (SRP) and its environs includes the development and maintenance of programs and plans at four levels of responsibility: (1) U.S. Department of Energy - Savannah River Operations Office (DOE-SR) Emergency Management Plans (DOE, 1983a-k); (2) Site-specific Contractor Response Plans (Du Pont, 1981); (3) State Emergency Plans (EPD, 1978; EPD draft; GDOD, 1978); and (4) County Emergency Plans (AEPA, 1982; ACCD, 1982). The basis for the SRP Emergency Response Program is the:

- Development of responsible organizations
- Delineation of procedures
- Identification of facilities
- Development of communications systems
- Commitment of resources
- Training of personnel
- Coordination with other agencies

DOE-SR Emergency Management Plans provide the basis for responses by Department of Energy management to incidents on the Savannah River Plant site, and when necessary, for interfaces with offsite organizations. Site-specific Contractor Response Plans are developed by E. I. du Pont de Nemours and Company, Inc. (Du Pont), the Department of Energy's operating contractor, in accordance with the Emergency Management Plans to implement responses to unusual incidents at the SRP. State Emergency Plans are used by South Carolina and Georgia state governments to respond to all types of emergencies within the states. They include specialized radiological emergency response plans. County plans further implement site-specific response actions defined in state plans.

The definition of a SRP Emergency Planning Zone (EPZ) is required by DOE Order 5500.3 (DOE, 1981e) relative to the evaluation of a worst credible accident. DOE-SR has bounded this accident as having a probability of occurrence equal to or greater than 10^{-6} per year for the site (Du Pont, 1983). Use of the probability of 10^{-6} per reactor-year as a threshold for reactor accidents has no absolute statistical basis, but it is consistent with normal practice in the nuclear power industry. The concept, used in this way, states that beyond this threshold, judgmentally, it is reasonable to regard the probability of an accident to be effectively zero, even though it might be unprovable, in a strictly physical sense, that the accident cannot occur. For example, this value can be derived from both an American National Standards Institute (ANSI) standard and the U.S. Nuclear Regulatory Commission Standard Review Plan. ANSI/ANS-212-1978, Appendix B, uses the value of 10^{-6} per site per year as a cutoff probability, below which combinations of events leading to accidents need not be considered for design purposes. The cutoff value does not include the probability of the consequences exceeding 10 CFR 100 dose guidelines, which is included in the NRC Standard Review Plan (NUREG-0800) acceptance criteria of 10^{-7} per year. The use of the 10^{-6} per site per year value in the ANSI standard for accident probability is consistent with the NRC Standard Review Plan's value

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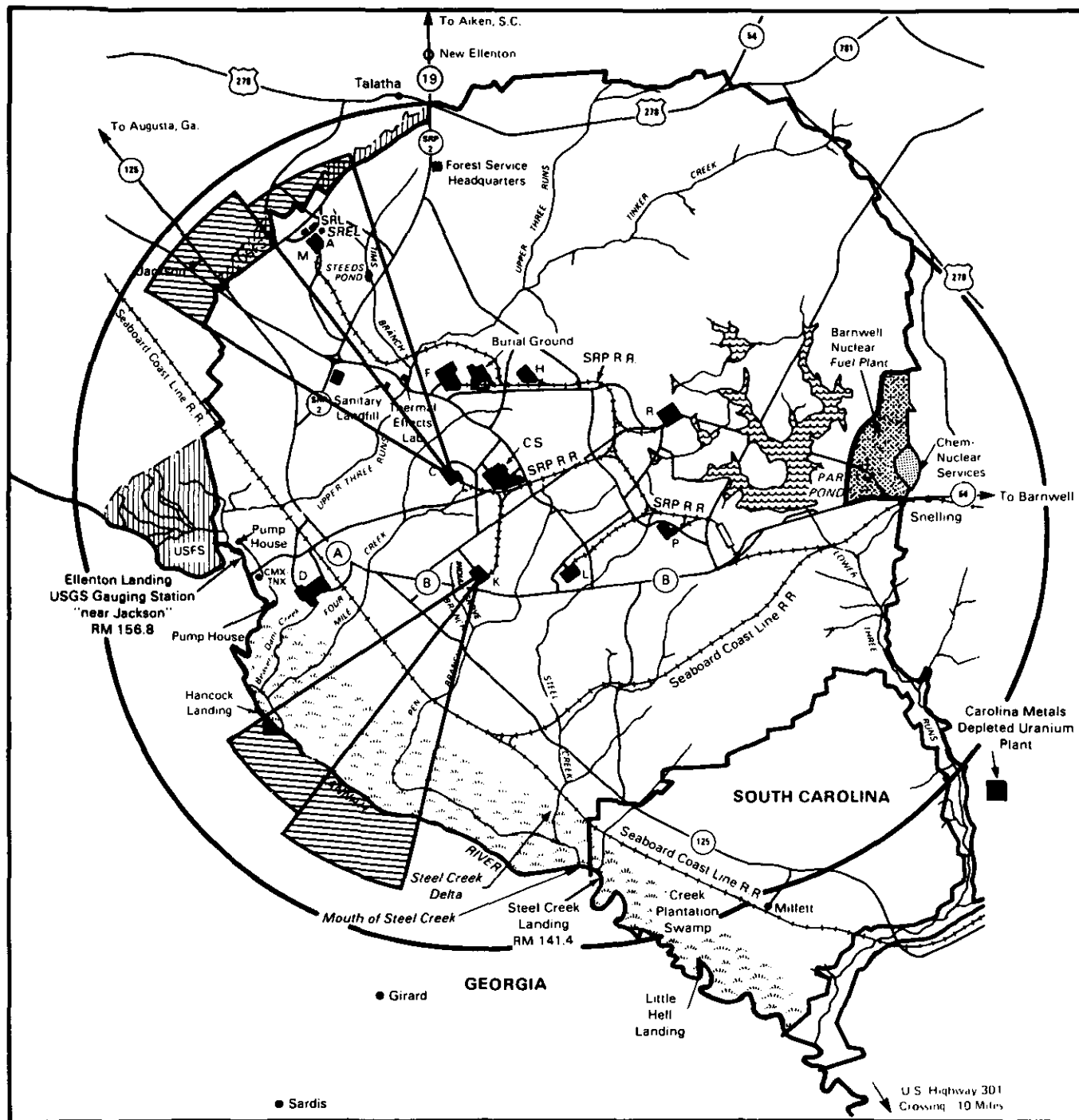
of 10^{-7} per site per year for accident plus consequence probability because the probability of the consequences exceeding 10 CFR 100 dose guidelines following an accident are conservatively estimated to be less than 10^{-1} . The SRP use of the 10^{-6} threshold is not for a so-called "uncontrolled" release, but for separating "treated-as-credible" from "treated-as-noncredible" accidents. Even with estimates of accident probabilities beyond the 10^{-6} per reactor-year threshold, radioactive releases are limited by performance of the reactor confinement system; they are not uncontrolled releases to the environment. The zone boundary is defined by calculated doses that exceed potential dose levels above 5 rem total body or 25 rem to an individual organ (EPA, 1975). A review of the fuels separation facilities Safety Analysis Reports (SAR) revealed that site boundary doses for the spectrum of postulated process accidents were all far below the 5 rem whole-body and 25 rem individual-organ criteria. A spectrum of events including fire, criticality, equipment failures, and natural disasters was considered. The maximum dose calculated at the SRP boundary from any of these incidents was about 0.12 rem to the whole body and about 8.5 rem to the lung from uranium.

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For the reactors, the worst accident for which it has been possible to assign a credible mechanism is a reloading accident, in which a series of faults and errors lead to a double target vacancy at the periphery of the reactor, causing a criticality. The probability of this accident ranges from 1.6×10^{-5} to about 1.6×10^{-6} per site-year, depending on whether credit is taken for protection provided by the recently installed charge/discharge computer system (discussed in Section 4.2.1.4); the consequence is that about 3 percent of the reactor core would melt. The release from the melted fuel assemblies is conservatively estimated to be equivalent to about 3 percent of the equilibrium fission product inventory of an operating reactor. This accident, evaluated for each reactor, is the bounding case for establishing the EPZ. The doses from this accident were calculated for each 22.5° sector around each reactor, and isodose boundaries were drawn. The calculations were performed in a manner consistent with the revised Safety Analysis Report; that is, for "worst case" meteorology that is exceeded only 0.5 percent of the time in each wind direction sector. This zone is defined by calculation of the gaseous plume (airborne release) exposure pathway doses wherein the principal exposure sources are: (1) total-body external exposure to gamma radiation from the plume and radioactive materials deposited on the ground, and (2) inhalation exposures from the passing radioactive plume. For this accident, the isodose line for the 25-rem thyroid dose remains within the Plant boundary. However, the 5-rem total-body isodose line extends as far as 2.9 kilometers beyond the Plant boundary in the northwest and southwest directions, as shown in Table H-1 and Figure H-1. The calculations were done individually for P-, K-, L-, and C-Reactors. The table shows the sectors in which the 5-rem boundary extends off the site and the contributing reactor. L-Reactor does not contribute to the offsite EPZ.


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The EPZ defines the area where provisions for immediate response actions are required. It also defines the area for detailed pathway analysis, predictions, monitoring, and radiological assessments. A larger planning zone has been defined for evaluation of potential exposures from the ingestion pathway (food and water), and is shown in Figure H-2. The zone covers an area with an 80-kilometer radius about the center of the SRP, a corridor 2 kilometers wide centered on the Savannah River from the SRP to the Atlantic Ocean and an area encompassing Savannah, Georgia, Beaufort, South Carolina, and the Savannah River Delta. Planning for this zone includes consideration of potential radioactive



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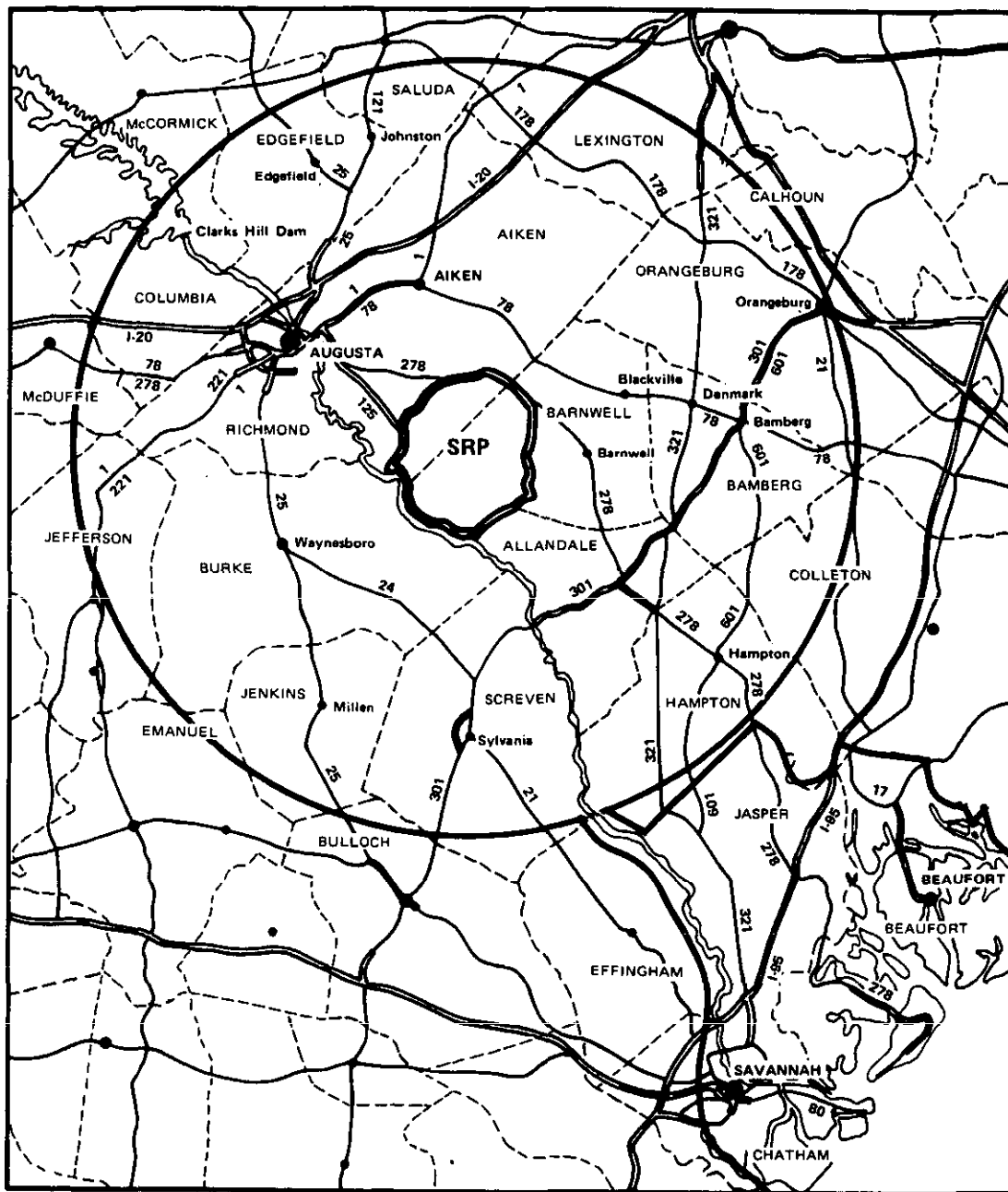
 Preliminary
Emergency Planning
Zone (from maximum
credible accident
analysis)

 Preliminary
Contingency Planning
Zone (16-kilometer
radius about each
operating reactor)

Source: DuPont, 1983.

Figure H-1. Emergency Planning Zone for the Savannah River Plant.

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Legend:

- Major roads
- - - County lines
- Cities/towns

0 10 20 30 40 Kilometers



Figure H-2. Ingestion Emergency Planning Zone for Savannah River Plant

Table H-1. Dose calculation results for reactor reload accident^{a,b,c}

Reactor	Sector	Distance to 5 rem boundary, miles	Distance to plant boundary, miles	Whole-body dose at plant boundary, rem
C	NW	9.0	7.6	6.0
	NNW	8.3	8.2	5.2
K	SSW	8.5	6.7	7.0
	SW	7.8	6.6	5.4

^aSource: Du Pont, 1983.

^b3% inventory release.

^c99.5% meteorology, worst sector.

materials deposited on ground and water surfaces that might be incorporated into food and water sources. No immediate responses are necessary in this zone, but monitoring and assessments are prudent to control or avoid internal doses from ingestion of contaminated foods (both terrestrial and aquatic) or water.

Beyond the EPZ, DOE has established a Contingency Planning Zone (CPZ) with a 10-mile radius around each reactor. In the CPZ, DOE will provide information and education about SRP operations and notification of incidents. In this area, calculated doses are less than those required by DOE for the EPZ; therefore, immediate warnings and population protective actions are not required. Within this zone, Georgia and South Carolina State guidelines indicate that an additional level of planning is appropriate to provide mechanisms for population sheltering and possible evacuation. In addition, estimates of reactor accident probabilities and consequences change with time as new operating data are added, understanding of processes improves, and process and equipment changes are made. For example, the probabilistic risk assessment (PRA) that has been initiated for SRP reactors might provide more accurate estimates of reactor accident risks, and the DOE establishment of EPZs in cooperation with South Carolina and Georgia officials should make allowances for variations in calculational analyses. The establishment of a Contingency Planning Zone accounts for these variations. Though potential doses in this area are expected to be less than those that require evacuation, and no other immediate protective actions are anticipated, this zone defines an area where DOE-SR and state and local authorities will agree on exactly what kinds of notification and responses are appropriate for SRP incidents.

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The Department of Energy informs the States of South Carolina and Georgia promptly of all incidents that have potential offsite consequences in excess of those stipulated in 10 CFR 20 (NRC, 1964) (the limits in 10 CFR 20 are not requirements but are used by DOE-SR for comparability). However, offsite emergency responses are not implemented unless an unplanned event could have radiological consequences above preset limits and for which protective actions might

have to be implemented. These preset limits and their corresponding incident classification are as follows (DOE, 1983²):

1. Unusual event. An event in progress or having occurred which normally would not constitute an emergency but which indicates a potential exists for possible significant offsite release of radioactive material. Activation of offsite response organizations is not expected. Emergency response actions are limited to onsite areas.

NOTIFICATION LEVEL*

Release or release potential with
projected offsite whole-body doses

≥ 2 mrem in any one hour or;

≥ 0.1 rem in any 7 consecutive
days or;

≥ 0.5 rem in any period of one
calendar year.

or

Airborne or waterborne radioactivity
concentrations released offsite

≥ 10 CFR 20, Appendix B
Table 2 > 24 hr.

NOTIFICATION TIME

States will be notified as soon as
practicable on discovery of an event
but no later than 1 hour after
discovery.

≤ 1 hr.

2. Alert. An event in progress or having occurred which involves an actual or potential substantial reduction of the level of nuclear safety of the facility. Limited offsite releases of radioactive material may occur. The purpose of an alert level is to assure that onsite and offsite emergency response personnel are properly advised and available for activation if the situation becomes more serious, to initiate and perform confirmatory radiation monitoring as required, and to assure appropriate notification of emergency conditions to the responsible organizations within DOE.

NOTIFICATION LEVEL

Release or release potential

≤ 10 Ci I-131 equivalent or;
 $\leq 10^4$ Ci Xe-133 equivalent.

or

*10 CFR 20.105 and .106 (10 FR 14434, October 20, 1964)

Releases with projected offsite dose

$\geq .5 \text{ rem} < 1 \text{ rem}$ whole-body, or;
 $\geq 1.5 \text{ rem} < 5 \text{ rem}$ thyroid.

NOTIFICATION TIME

States will be notified as soon as practicable on discovery of an event but no later than 30 minutes after discovery.

$\leq 30 \text{ min.}$

3. Site emergency. An event in progress or having occurred which involves actual or likely major failures of facility functions which are needed for the protection of onsite personnel, the public health and safety, and the environment. Releases offsite of radioactive material, as identified below, are likely or are occurring. The purpose of the site emergency designation is to assure that appropriate monitoring teams are dispatched, personnel required for determining onsite protective measures are at duty stations, predetermined protective measures for onsite personnel are identified and to provide current information to DOE and consultation with offsite officials and organizations.

NOTIFICATION LEVEL

Release or release potential

$> 10 < 10^3 \text{Ci I-131}$ equivalent or
 $\geq 10^4 < 10^6 \text{Ci Xe-133}$ equivalent.

or

Release with projected offsite dose

$> 1 \text{ rem} < 5 \text{ rem}$ whole body, or;
 $\geq 5 \text{ rem} < 25 \text{ rem}$ thyroid.

NOTIFICATION TIME

States will be notified as soon as practicable on discovery of an event but no later than 30 minutes after discovery.

$\leq 30 \text{ min.}$

4. General emergency. An event in progress or having occurred which involves actual or imminent substantial reduction of facility safety. Releases offsite are occurring or are expected to occur and exceed the levels identified below. The purpose of the general emergency level is to initiate predetermined protective actions for onsite personnel, the public health and safety, and the environment, provide continuous assessment of emergency conditions and exchange of information both on-site and offsite. Declaration of a general emergency will initiate major activation of DOE-wide resources required to effectively mitigate the consequences of emergency conditions and assure the protection of onsite personnel, the public health and safety, and the environment to the extent possible.

NOTIFICATION LEVEL

Release or release potential

$>10^3$ Ci I-131 equivalent or;
 $>10^6$ Ci Xe-133 equivalent.

or

Releases with projected offsite
dose

>5 rem whole body, or;
 >25 rem thyroid.

NOTIFICATION TIME

States will be notified as soon
as practicable on discovery of an
event but no later than 30 minutes
after discovery.

≤ 30 min.

Should the initial assessment indicate that the incident falls below classification guidelines outlined above (e.g., of minor consequence to the public health and safety), DOE will make additional evaluations to further determine the need for notification of offsite authorities. Considerations in this determination will include an assessment of the potential/actual level of news media and/or public interest resulting from the incident. Prompt notifications will be made, to the extent practical, prior to issuance of a formal "News Release" or if a significant number of inquiries concerning the incident are received from the media or general public.

TC The development of emergency response plans for SRP is based on (1) the quantity of radioactive material released, or (2) the projected offsite doses from operational releases, as shown in the classifications above. However, the mechanism causing the release does not govern the protective actions implemented. Therefore, emergency response plans are valid for all releases caused by (1) natural phenomena (e.g., earthquakes or tornados), (2) equipment failures (e.g., power outages or broken pipes), (3) procedural errors (e.g., misloading or valve closings), or (4) deliberate actions (e.g., sabotage or terrorist attacks). The offsite response to the released radioactivity is the same. The onsite safeguards and security responses would be different if the cause is identified as a deliberate action. Emergency responses to acts of war also would mobilize the same resources used for general emergencies, with the addition of higher level coordination and the involvement of regional military units. However, specific planning for acts of war on the SRP are not included in these plans.

Emergency plans for the EPZ and CPZ require cooperation, coordination, and integration of resources and responses of the state agencies of South Carolina and Georgia and the county agencies of Aiken, Allendale, and Barnwell in South Carolina, and Burke in Georgia. State and county agencies are responsible for developing and implementing emergency plans for their respective jurisdictions. The Department of Energy is responsible for developing and implementing plans for the plant site. They are also responsible for interfacing with other Federal agencies, local industries, and state and county agencies to define potential incidents, potential consequences of releases, and required resources,

and to ensure that response plans and actions are fully integrated to meet potential needs.

Memoranda of Understanding (MOU) between the States of South Carolina and Georgia and the DOE relative to general responsibilities for notification and emergency response to incidents or potential incidents at SRP were established in August 1974 under the DOE predecessor, the Atomic Energy Commission. These memoranda were renegotiated between the States and DOE-SR, December 1978, and November 1979, respectively (DOE, 1978; DOE, 1979). The current list of agencies and organizations to be notified is:

<u>Always required</u>	<u>Only when necessary</u>	<u>Only for general emergency</u>
DOE-HQ	South Carolina Governor's Office	Aiken County, SC
South Carolina Department of Health and Environmental Control	Georgia Governor's Office	Barnwell County, SC
South Carolina Emergency Preparedness Division	U.S. Army Corps of Engineers	Allendale County, SC
Georgia Department of Natural Resources	Federal Aviation Administration	Burke County, GA
Georgia Emergency Management Agency	Fort Gordon	Richmond County, GA
	Federal Emergency Management Agency	
	Fort Jackson	
	Chem-Nuclear Services, Inc.	
	Seaboard Coast Line Railroad	
	Vogtle Power Plant	
	Allied General Nuclear Services	

The plans outlined in this appendix meet requirements set forth by Department of Energy Orders (DOE, 1981a-f; 1983o) and reflect Department of Energy guidance for offsite planning.

H.2 EXISTING EMERGENCY PLAN

The Department of Energy, the States of South Carolina and Georgia, and the Counties of Aiken, Allendale, Barnwell, and Burke have designated persons responsible for emergency preparedness and have developed various forms of emergency plans. Since portions of the EPZ and CPZ lie outside of the SRP boundary, and within these jurisdictions, response plans are being developed with full cooperation of DOE and state and county agencies. Integration of technical expertise and other resources of responsible agencies is necessary in the development of effective response action plans. General program requirements also include drills and exercises to address various potential emergencies including the Savannah River Plant. The present status of plans is detailed in the following sections.

H.2.1 DOE-SR emergency management plans

The DOE-SR is developing a set of 11 Emergency Management Plans for managing emergencies on and off the SRP (DOE, 1983a-k). These plans are listed in Table H-2, along with their general content and status. Each plan addresses the:

- Purpose
- Jurisdiction and authority
- Policy
- Scope
- Organization
- Responsibilities
- Operations

for the activities and responses defined by the plan as well as appendices and annexes to delineate details, definitions, logic, procedures, and checklists for responsible agencies and individuals. These plans include actions to be taken by the Department of Energy and appropriate coordination by designated state and county officials. They are expected to provide information and guidance concerning incidents at the Plant and the use of resources to disseminate and/or take action. Details of organization, responsibilities, and operations are given in each plan. DOE-SR Emergency Management Plans will be submitted to DOE-HQ for review and concurrence before their formal adoption. The DOE-SR Office of External Affairs (OEA) is responsible for developing and implementing all emergency plans for the SRP.

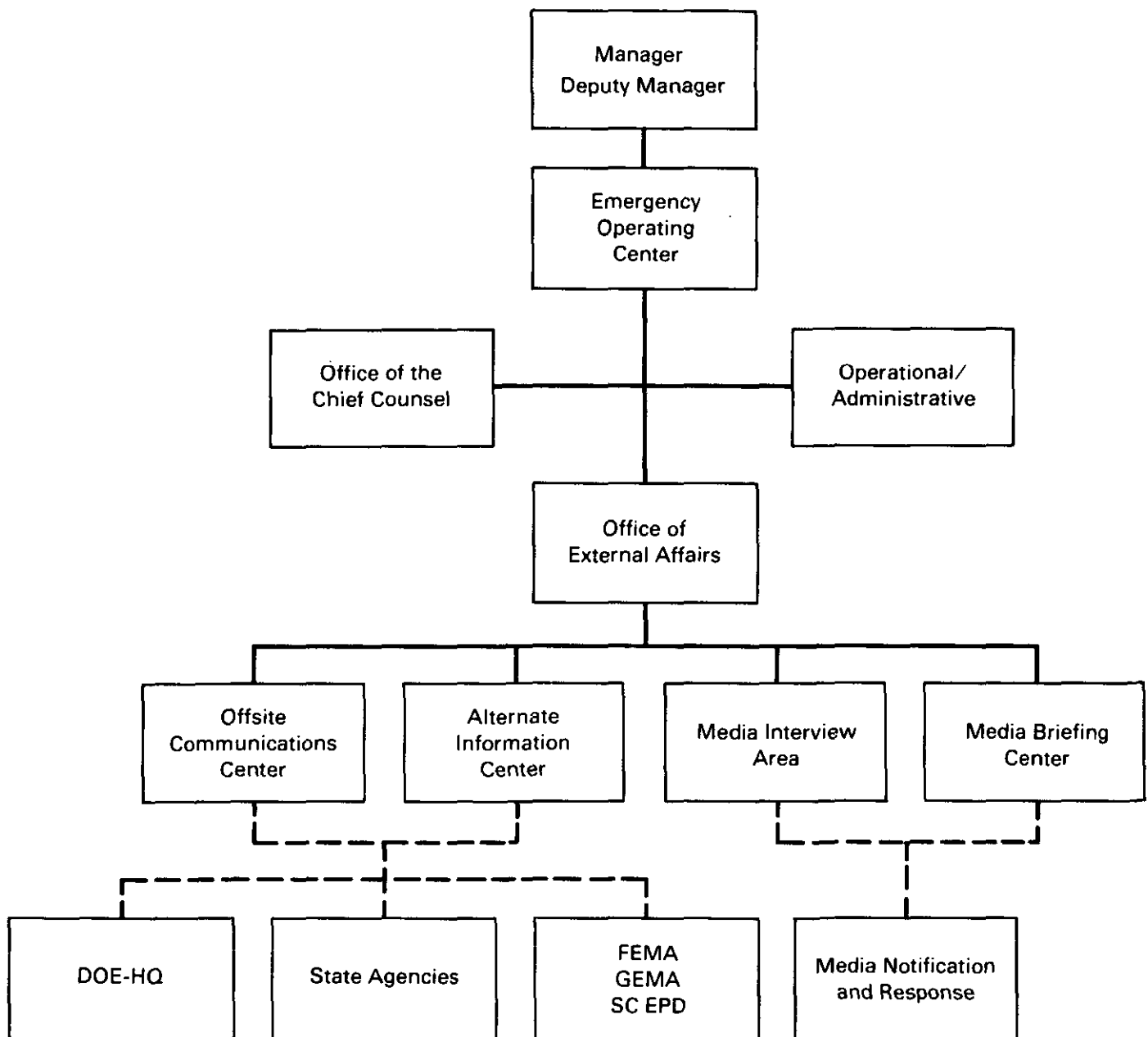
TC | To provide examples of the general content of these plans, the following discussions are provided from the Emergency Public Information Plan (EPIP), SR306 (DOE, 1983e) and the Onsite Radiological Emergency Response Plan, SR402 (DOE, 1983f). Figure H-3 shows the lines of communication and coordination for the plan. Figure H-4 shows the steps to be followed to make decisions and take actions relative to preparing statements, issuing news releases and operating information centers. In addition to the overview logic, the plan provides sublogic networks for each activity step (circles) so that directions at the most detailed level are available.

Figure H-4 provides a summary of the sequence of events, decisions and the consequent flow of information that results from an SRP incident. Beginning with (1) a declared emergency, (2) the activation of the Emergency Operations Center (EOC), and (3) a need to implement EPIP, the overview logic diagram outlines the activities that follow:

- OEA initial response OEA determines whether or not an initial response is required, and if so, provides the necessary response. After analyzing data provided upon arrival at the EOC, OEA advises the DOE-HQ Press Secretary and assesses the public information impacts of the incident.
- Assessment preparatory to a statement or news release OEA prepares a statement for the media and determines the associated onsite and offsite impacts. Based upon the determined response level, OEA assesses the impacts of the incident on the Congress, DOE-HQ, other Federal agencies, state and local governments, industry, and the media, as well as other organizations.

Table H-2. Emergency Management Plans for the Savannah River Plant
(DOE, 1983a-k)

SR 101	<u>Comprehensive Emergency Preparedness and Response Plan</u> - provides the overall, integrated organization and operations of the DOE-SR Emergency Management Program.
SR 201	<u>Duty Officer Procedures</u> - delineates the responsibilities and actions of the DOE-SR Operations Duty Officer relative to plant emergencies.
SR 202	<u>Emergency Management Team Plan</u> - provides for a comprehensive response to any accident that is not a health and safety problem but is or may be of high interest, to governmental authorities or the general public.
SR 302	<u>Offsite Notification Plan</u> - provides a classification and procedure for defining onsite incidents and notifying designated offsite agencies of the potential consequences.
SR 306	<u>Emergency Public Information Plan</u> - provides for a comprehensive response and sustained information dissemination capability for a wide range of incidents to satisfy offsite interests and inquiries.
SR 402	<u>Onsite Radiological Emergency Response Plan</u> - provides procedures and resource responsibilities for onsite responses to potential radiological consequences.
SR 403	<u>Nonradiological Hazardous Substances Spill or Release Response Plan</u> - provides for an effective level of response to a broad scope of unplanned spills or releases of nonradiological substances. It also addresses communication and coordination with state response agencies.
SR 405	<u>Bomb Threat Response Plan</u> - provides for an effective level of response to bomb threats and discovery of suspicious devices.
SR 501	<u>Weapons Incident/Accident Response Group Support Plan</u> - provides the procedures for interim response to an incident or accident involving a nuclear weapon, until the DOE Region 3 Accident Support Group assumes their responsibilities. It also provides necessary interface with state and local agencies.
SR 502	<u>Radiological Assistance Program Plan</u> - provides the response for requests to assist with respect to radiological incidents outside of SRP but within DOE-Region 3. The Radiological Assistance Team advises the onscene authorities on measures to contain and eliminate radiological emergency situations.
SR 602	<u>Emergency Preparedness Appraisal Program</u> - provides the necessary coordination and direction to ensure adequate response capabilities. It provides for evaluation of the level of emergency preparedness.

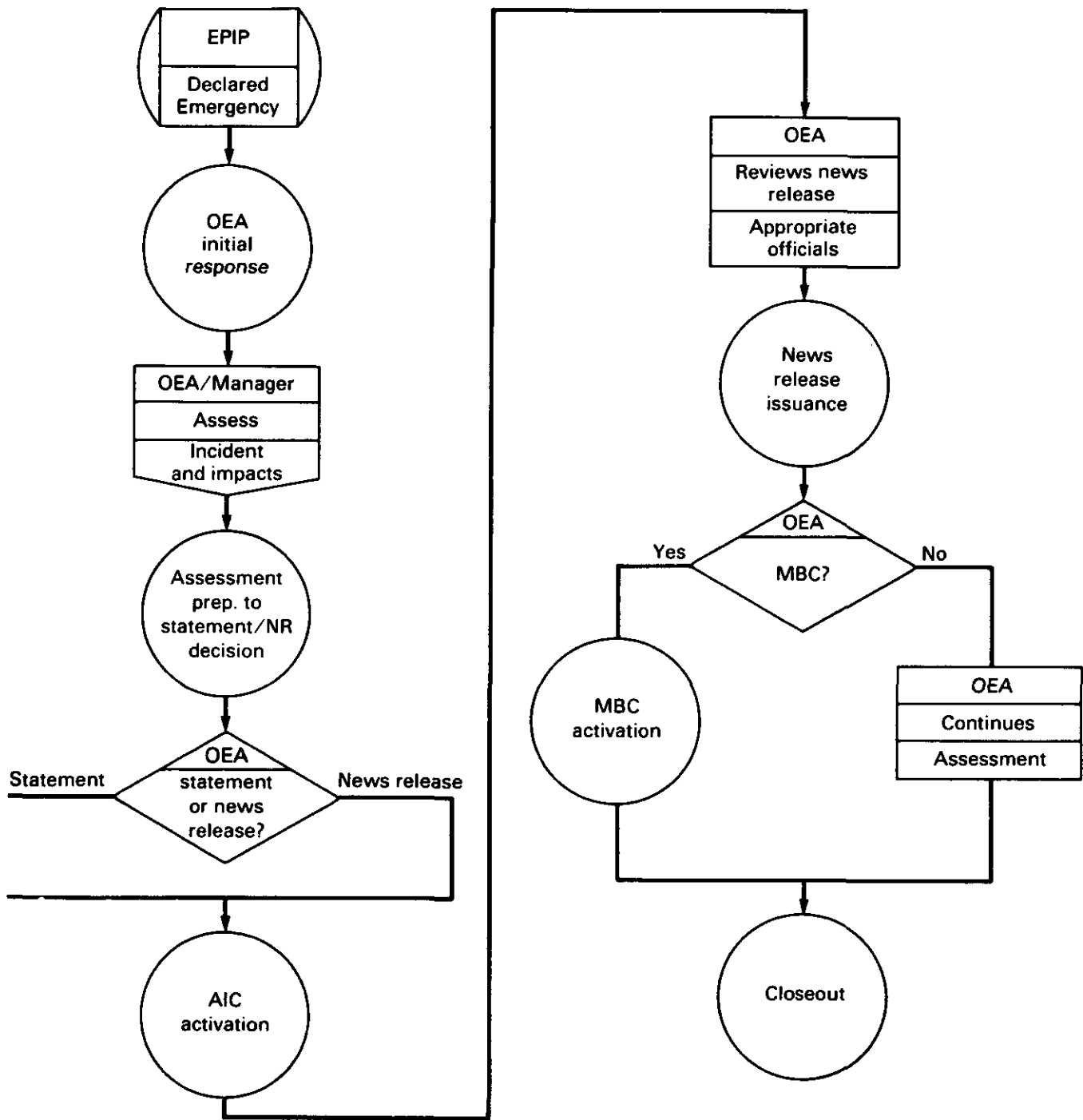


Legend:

- Internal SRP information flow
- - - - External SRP information flow
- FEMA — Federal Emergency Management Agency
- GEMA — Georgia Emergency Management Agency
- SC-EPD — South Carolina Emergency Preparedness Division
- DOE-HQ — Department of Energy Headquarters

Source: DOE, (1993e).

Figure H-3. Lines of communication and coordination for the Emergency Public Information Plan.



Source: DOE (1983e).

Legend:

EPIP — Emergency Public Information Plan
 OEA — DOE-SR Office of External Affairs
 NR — News Release
 AIC — Alternate Information Center
 MBC — Media Briefing Center

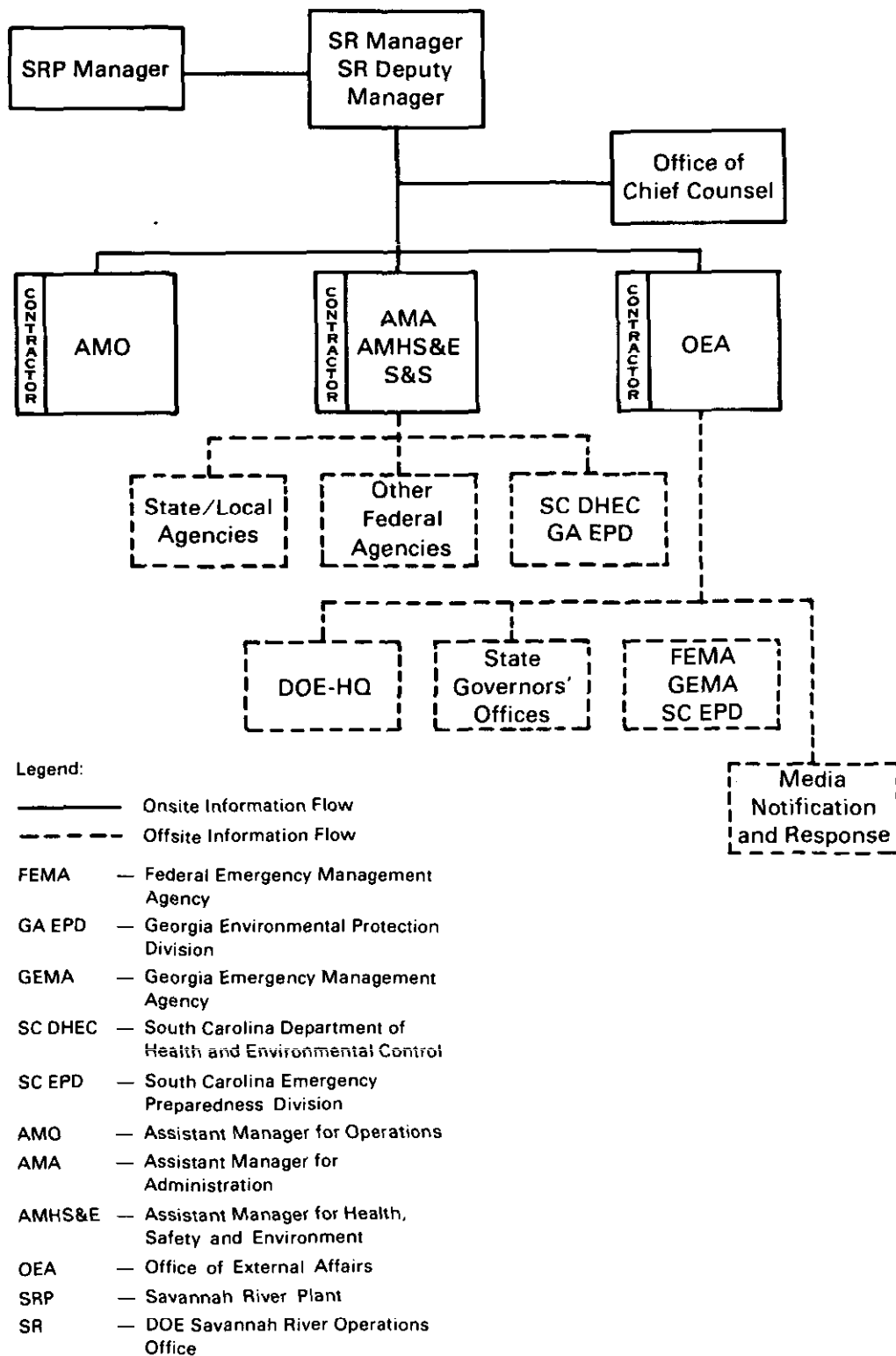
Figure H-4. Overview logic of the Emergency Public Information Plan.

- Alternate Information Center (AIC) activation Based upon the offsite notifications to be prepared (see notification classification in Section H.1 Introduction), the scope of the response, and current incident status information, OEA prepares the appropriate news release or statement and submits it to the Manager for his approval. The AIC is activated as needed. If additional public affairs support is required, OEA notifies DOE-HQ.
- News release issuance Whether or not the AIC is activated, OEA reviews the news release with the Governor's office and obtains approval of the release from the Manager. OEA provides early notification to state agencies, issues the news release, and provides appropriate offsite notification.
- MBC activation After a further assessment of media response, OEA evaluates the need for a Media Briefing Center (MBC). If an MBC is to be established, OEA determines the MBC location and directs the necessary Contractor technical and administrative support. OEA identifies the technical interviews required.
- Closeout OEA continues to analyze the volume of inquiries, to direct media response, and to obtain incident status information. When the incident is concluded, OEA prepares and delivers a closeout statement.

The first step in implementation of an effective Emergency Planning and Response Program is the development of SRP site-specific emergency response plans in cooperation with affected state and county officials and agencies. DOE-SR has recently entered into agreements with lead agencies of South Carolina (DOE, 1983m) and Georgia (DOE, 1983n) to prepare such plans. The Department is providing staff assistance to develop these plans and will conduct exercises to assure that they provide appropriate responses. These agreements delineate the purpose, authorities, stipulations, responsibilities, and implementation procedures for developing the required plans.

For the Onsite Radiological Emergency Response Plan, SR402, Figure H-5 shows the lines of communication and coordination to be followed during a response. Figure H-6 shows the steps to be followed to make decisions and take actions related to reporting, activating the Emergency Operations Center, activating emergency management teams, making offsite modifications, and activating the Offsite Technical Coordination Center (OTCC). The plan includes sublogic networks for each activity step (circles), so directions and procedures at the most detailed level are available. The logic in Figure H-6 begins with the discovery of a radiological incident by a reporting source and includes the activities that follow:

- Incident Discovery Response. On discovery of an incident, the reporting source must determine if it is an emergency. If the incident is an emergency, the reporting source notifies the Emergency Operation Center (EOC) Patrol, which activates the EOC. If the reporting source does not classify the incident as an emergency, he or she notifies the EOC Patrol and the contractor management. Contractor management assesses the incident and either activates the EOC or notifies SR management to make that decision. In the latter case, SR management assesses the incident and



Source: DOE, 1983f

Figure H-5. Lines of communication and coordination for an onsite radiological emergency response.

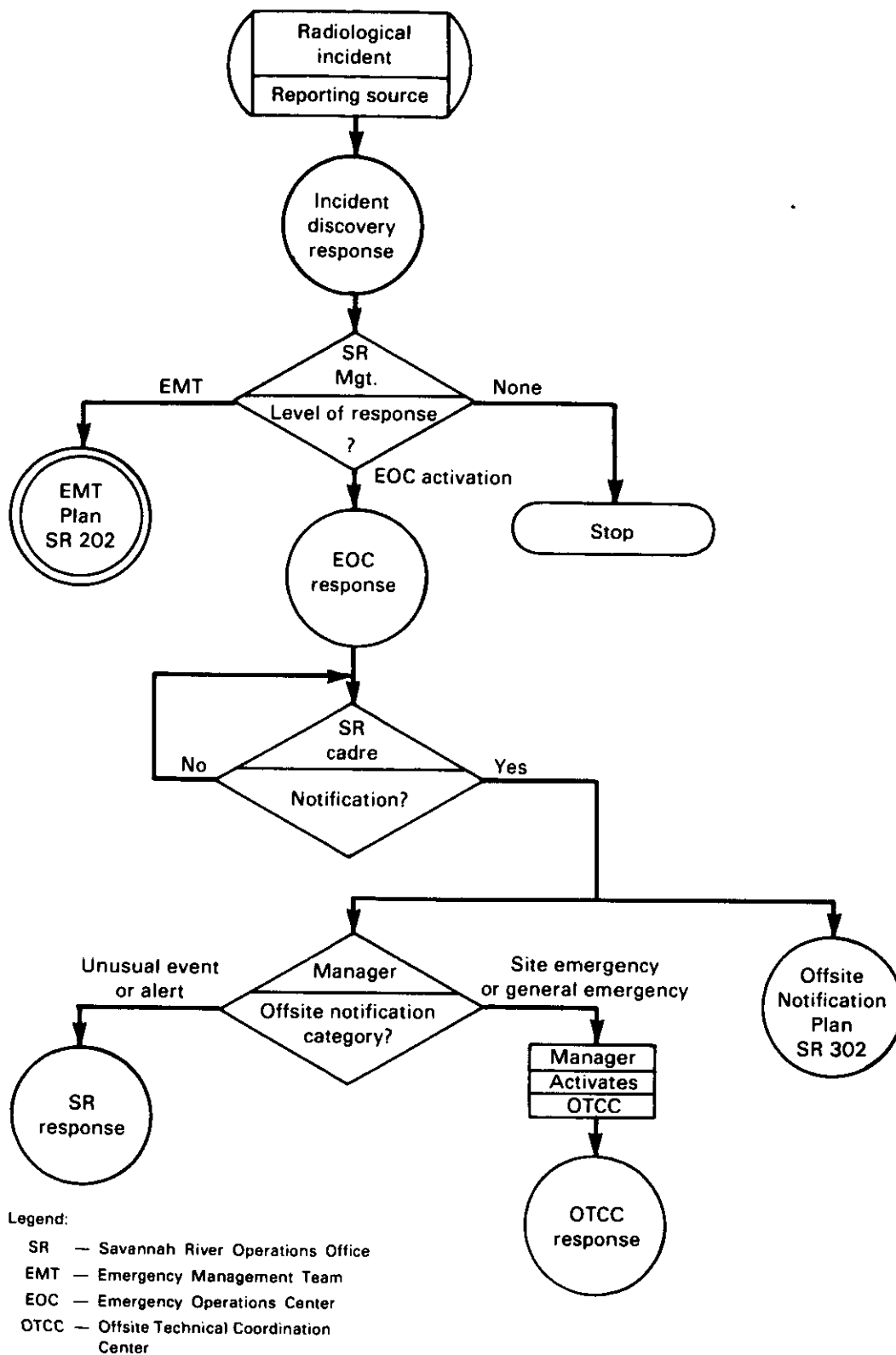


Figure H-6. Overview logic of the onsite radiological emergency response plan.

determines whether the incident requires EOC or Emergency Management Team (EMT) activation or no further action.

- EOC Response. After the decision has been made to activate the EOC, the EOC patrol notifies the EOC Cadre. The cadre reports to the EOC and obtains the emergency Incident Summary to identify characteristics that will enable it to make an assessment. EOC Cadre recommendations are forwarded to the Manager concerning incident mitigation procedures, SRP impacts, required logistical support, security requirements, worker and safety impacts, medical requirements, classification requirements, public impacts, and the need for media and other offsite notifications.
- SR Response. The Manager determines the SR response to offsite radiological incidents. He is assisted by senior SR management staff who are part of the EOC Cadre. SR maintains technical coordination with both the South Carolina Department of Health and Environmental Control (SCDHEC) and the Georgia Environmental Protection Division (GA EPD); controls access to the SRP plant site; maintains coordination with the Georgia Emergency Management Agency (GEMA) and the South Carolina Emergency Preparedness Division (SCEPD); and monitors control and mitigation actions.

The level of SR response is determined by the selection of an offsite notification category. If the incident is classified as an unusual event or alert, the EOC Cadre advises the states on offsite consequences and advises the Manager on whether to activate the OTCC.

If the EOC Cadre does not recommend activation of the OTCC, it maintains coordination and communication with state authorities until the incident is terminated. Periodically the cadre reevaluates the need to activate the OTCC.

In addition, the Manager directs the deployment of the offsite liaison and ensures that technical briefings are provided and response actions outside procedures are assessed. Offsite liaison is provided to state authorities (Georgia and South Carolina Forward Emergency Operating Center (FEOC)) and commercial operators (Barnwell and Vogtle). The offsite liaison advises these authorities on the status of the incident. The offsite liaison in turn advises the EOC Cadre of the response actions of the state and commercial authorities. Briefings provided by the offsite liaison, in addition to technical briefings, allow the EOC Cadre to brief the Headquarters EOC on the incident status; it does this periodically throughout the incident.

The EOC staff also assesses response actions outside of established procedures. Based on recommendations, the Manager decides to initiate response action outside of procedures.

- OTCC. After the decision has been made to activate the OTCC, the EOC Cadre determines its staffing requirements. The cadre notifies OTCC participants. The OTCC staff (onsite and offsite participants) has three primary functions: to coordinate radiological monitoring, to advise the EOC on the state assessment of offsite consequences, and to conduct periodic briefings on the onsite situation. When the OTCC staff

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has completed these activities and the incident has terminated, the OTCC is deactivated. The EOC Cadre then advises offsite authorities and DOE-HQ of the termination of the incident and the Manager submits a formal report to the Secretary.

H.2.2 Savannah River Plant site-specific contractor response plans

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DOE-SR's operating contractor for the Savannah River Plant is E. I. du Pont de Nemours and Company (Du Pont). Du Pont has been responsible for preparing all the onsite emergency response plans and for carrying out their responsibilities under these plans. All onsite plans developed by Du Pont are submitted to DOE-SR for approval before they are implemented. The Emergency and Disaster Plans for the Savannah River Plant (Du Pont, 1981) implement the onsite portions of the DOE-SR's Comprehensive Emergency Preparedness and Response Plan (DOE, 1983a). These two plans are the foundation of the DOE-SR Emergency Management Program. There are many subtler plans of both documents that implement the specific facility, process, or event aspects of the general plans. All necessary plans have been prepared and exercised in simulated operating conditions and/or utilized in actual emergency incidents. Table H-3 lists the key subtler plans. These plans will be integrated with state and local offsite plans, so the total response to SRP incidents will be coordinated adequately and appropriately. DOE-SR has entered into an MOU with The Dwight David Eisenhower Army Medical Center at Fort Gordon, Georgia, in which the parties have agreed to assist in SRP emergencies and accept radiation-exposed or contaminated emergency patients (DOE, 1982). See Appendix G for additional details of onsite planning.

H.2.3 South Carolina and Georgia state plans

As described in Section 1.0, general radiological emergency response plans exist for both states. Additionally, both states have site-specific radiological emergency response plans for nuclear power plant incidents which establish emergency organizations, and assign responsibilities and resources. These general plans with overall direction have been determined adequate by responsible state agencies and respective radiological response plans for nuclear power plant facilities have been approved by the Federal Emergency Management Administration (FEMA), the Nuclear Regulatory Commission (NRC), and other appropriate agencies. These plans provide an effective basis for the development of site specific response plans for the SRP.

H.2.4 County plans

South Carolina Counties of Aiken, Allendale, and Barnwell, and the Georgia County of Burke have existing emergency plans (e.g., ACCD, 1982; AEPA, 1982) in varying stages of formalization. These plans assign responsibilities for responding to general emergency situations. The general portions of the Aiken and Allendale County plans have been approved by the State. Aiken County has a full-time emergency preparedness director and Allendale County has a part-time emergency preparedness director. The general portion of the Barnwell County

Table H-3. Subtier Emergency Plans to Support "Emergency and Disaster Plans for Savannah River Plant" (Du Pont, 1981)

DPSOP Numbers ^a	Title
67	Emergency and Disaster Plans - Reactor Department
67-1	Fire Control Plan: 100 Areas
115-FH	200 Areas Emergency and Disaster Plans
115-2FH	Fire Protection Plan for 200 Areas
119	Emergency and Disaster Plans, 300/700 Area
119-1	Fire Control Plan, 300/700 Area
130-2	Separations Process, Building 221-F
135	400 Area Emergency and Disaster Plan
135-1	Fire Control Plan: 400 Area
147-3	HM ^b Process: 221-H Industrial Hazards
178	Fire Control Plan for SRP
179	Emergency and Disaster Plans for Health Physics Section
181	Emergency Actions: Medical Department and Security Division
307	Consolidated Communication Center Equipment
47	CMX-TNX ^c Emergency and Disaster Plans

^aDocument identification numbers

^bEnriched uranium process

^cExperimental and testing area

plan is complete and the county has a full-time emergency preparedness director. The general portion of the Burke County plan is not formalized but the county has a part-time emergency preparedness director. Richmond County is not included in the EPZ or the CPZ. However, because the county has a relatively large population, planning for notification and public education will be conducted. Specific plans for responses to SRP incidents are being developed with staff assistance from DOE-SR.

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H.3 OFFSITE PLANNING

Because portions of the EPZ and CPZ fall outside SRP boundaries, within state and county jurisdictions, a higher degree of planning has been considered by these governments. The specific nature of capabilities to meet these requirements has been determined in cooperation with responsible state and county agencies. General program requirements also include drills and exercises to evaluate plans and responses for incidents at the Savannah River Plant.

H.3.1 Department of Energy plans

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All DOE-SR Emergency Management Plans are complete. The Department of Energy has consulted with appropriate state and county officials and agencies and has provided staff assistance in the development of detailed offsite plans for the EPZ and CPZ to respond to incidents at the SRP. The site-specific aspects of these plans include actions to be taken by the Department of Energy and provide for coordination with state and county officials. Additionally, these plans provide information and guidance on responses to incidents at the Plant and the use of resources to disseminate and/or take action on the guidance. Formal agreements have been reached between the states and DOE-SR to conduct appropriate exercises to assure the necessary coordination, integration, and implementation (DOE, 1983m,n).

H.3.2 South Carolina and Georgia plans

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Site-specific SRP emergency response plans for South Carolina and Georgia provide prompt notification of SRP incidents to responsible officials in the EPZ and CPZ. The States' general radiological response plans are presently based on a full NRC-type Emergency Planning Zone response. Plans for the SRP EPZ address comparable considerations. These requirements include the following:

- Organization and Assignment of Responsibilities - to assure that emergency organizations are established and responsibilities assigned and included in written emergency plans.
- Emergency Response Support and Resources - to ensure that arrangements are made for requesting and effectively using outside assistance resources.
- Emergency Response Level Plans - to assure that a standard emergency response level plan is adopted and the associated response actions for each emergency response level are established.
- Notification Methods and Procedures - to assure that notification procedures and message content are developed and means of notification are established.
- Emergency Communications - to assure that provisions exist for prompt communications among principal response organizations, emergency response personnel, and appropriate Federal, State, and local officials.
- Public Education and Information - to ensure that public education is provided and that plans are in place for a coordinated media program.
- Emergency Facilities and Equipment - to ensure adequate facilities and equipment are provided and maintained to support emergency response.
- Accident Assessment - to ensure that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

- Protective Response - to assure guidelines are developed and are in place for protective actions for emergency workers and the general public.
- Radiological Exposure Control - to ensure guidelines and means for controlling radiological exposures are established for emergency workers.
- Medical and Health Support - to ensure that arrangements are made for medical services for contaminated injured individuals.
- Recovery and Re-entry Planning and Post Accident Operations - to assure general plans for recovery and re-entry are developed.
- Exercises - to ensure that DOE, state and local organizations conduct periodic exercises to develop and maintain key skills.
- Radiological Emergency Response Training - to ensure that training programs are provided for management officials, specialized emergency duty personnel, and all other personnel having emergency responsibilities.
- Memoranda of Understanding and Letters of Agreement - to ensure that appropriate instruments of agreement/understanding have been entered into with onsite and offsite support organizations.

To ensure the adequacy of plans, the Department of Energy will conduct an annual exercise and provide the opportunity for state and county government participation. The basic responsibility of state and county government emergency preparedness organizations is to provide appropriate capabilities for responding to potential emergencies that may occur in their jurisdiction.

Plans for the CPZ will focus more on:

- Incident notification
- Emergency public information and education
- DOE/state communication and coordination
- State/county communication and coordination.

State emergency response plans for SRP were completed in March 1984.

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H.3.3 County plans

County emergency response plans for the SRP supplement the general county emergency plans and provide for the implementation of appropriate actions related to an SRP incident. Site-specific plans identify the organizations, responsibilities, resources, and coordination to be undertaken by the county in such cases. Interfaces with the Savannah River Plant and with state emergency preparedness organizations have been established. Areas considered during this planning include notification, communication and coordination, public information, public warning, law enforcement, and protective response (sheltering, evacuation, or other protective action), depending on whether portions of the county are in the EPZ, the CPZ, or both.

County Emergency Response Plans include site-specific radiological plans relating to incidents at the Savannah River Plant and follow a standardized format approved by the states that support the state plans on a site-specific basis.

No requirement exists for public warning outside the Emergency Planning Zone. However, specific plans for public notification within the CPZ and general plans for notification in outlying areas have been implemented at an appropriate level, having been determined through the ongoing planning process between DOE and officials of state and county governments.

H.4 SUMMARY

The Department of Energy has emergency plans to respond to onsite incidents at the SRP. The South Carolina Operational Radiological Emergency Response Plan is completed; it includes a site-specific Radiological Emergency Response Plan for the Savannah River Plant. The State of Georgia Radiological Emergency Plan also includes a site-specific Radiological Emergency Response Plan for the SRP. County plans are complete for the site-specific radiological plans for the EPZ or CPZ.

Department of Energy personnel, working with state and county emergency preparedness officials, have identified the organizations, responsibilities, coordinations, and resource aspects of participating agencies. State and county jurisdictions/issues were resolved before the completion of state plans. County plans support the state plans on a site-specific basis. All plans were completed by March 31, 1984.

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